NEWARK'S WATER FACTS

Population Served	35,992
Metered Customers	9,756
Annual Average Pumpage	3.8 million gallons per day
Service Area	25 square miles
Surface Water Supply	61%
Ground Water Supply	38%
Purchased Water Supply	1%

Conservation Tips

Check your toilet for leaks by putting food coloring in your tank. If the color shows up in the toilet bowl without flushing, you have a leak that is wasting water and costing you money.

- Turn the water off while brushing your teeth.
- Take shorter showers.
- Use dishwasher and clothes washer for full loads only.
- Keep a bottle of cold water in the refrigerator.
- Water your lawn only when necessary.
- Water in the evening or early morning to reduce evaporation. Avoid watering on windy days.
- Use a shut-off on your hose.
- Fixing a leaking faucet can save 140 gallons of water a week.
- Use a bowl of water to clean and prepare vegetables, rather than letting the faucet run.

For more water conservations tips, check out our website at www.cityofnewarkde.us/water

If you have any questions concerning your water or your water service, please call or write to us at:

Roy Simonson, Bill Zimmerman or Andrea Coyle
Newark Water & Wastewater Department
220 Elkton Road, Newark, Delaware 19711
(302) 366-7055 • www.cityofnewarkde.us/water

PWS ID 0000630

Newark City Council meets on the second and fourth Monday's of the month. The meetings are held in the City Council Chamber at the Newark Municipal Building, 220 Elkton Road, Newark, Delaware, at 7:30 pm.

Additional information can be obtained by calling the following agencies:
EPA Safe Drinking Water Hotline – (800) 426-4791
Delaware Office of Drinking Water – (302) 741-8630
University of Delaware, Water Resources Agency
www.wr.udel.edu

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NEWARK DELAWARE
Committed to Service Excellence

Water Quality Report 2009

Excellence in Water Quality... Our Constant Goal!

NEWARK DELAWARE
Committed to Service Excellence

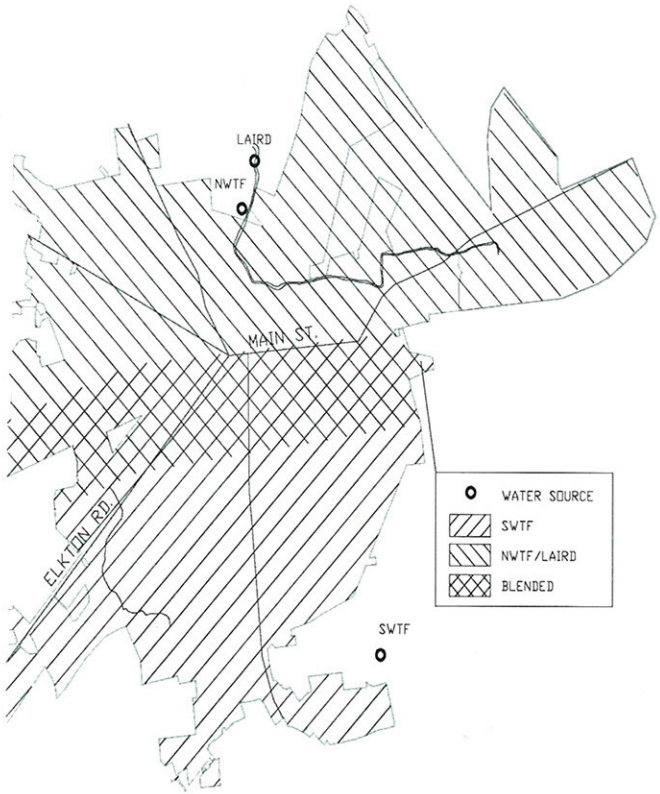
Water & Wastewater Department
City of Newark, Delaware

MANAGING THE DISTRIBUTION SYSTEM

Another tool for water quality maintenance is effectively managing the 160 miles in our water distribution system. Seven tanks store enough water to last two days. We now have a 318 million gallon raw water reservoir on line. We flush the entire system yearly. Water needs to remain fresh and retain sufficient chlorine for disinfection. Each month, we analyze 40 distribution system water samples for bacterial content and chlorine. Regulated substances are sampled as required.

HOW THE WATER IS TREATED

At the Newark Water Treatment Facility (NWTF), water from the White Clay Creek is clarified with alum and polymer and then filtered to remove impurities. Chlorine is added to kill harmful bacteria and viruses. Other chemicals added to the water are lime, to reduce the corrosivity of the water, and fluoride to protect your teeth.



The South Well Field Iron & Manganese Removal Plant aerates well water by a forced air blower, to remove any volatile compounds and raise the pH. The water is then treated with chlorine and potassium permanganate and pumped through green sand filters, which removes all iron and manganese in addition to filtering the water. Other chemicals added to the water are fluoride to protect your teeth and lime to further raise the pH and Polyphosphate to reduce the corrosiveness of the water.

Water in our new reservoir is recirculated by a pump through a pipeline extending around the perimeter. Water leaves the pipeline via adjustable slots and flows to the large wetlands bench. Here the water flows through a special sand and gravel material before being returned to the reservoir. This wetland's bench helps to clarify and remove nutrients from the water.

THE SOURCE OF YOUR WATER

The adjacent map illustrates which of the sources serves you. The South Well Field contains nine wells drawing water from the sand and gravel Potomac and Columbia aquifers. The Laird Tract Wells have four rock wells drawing from the Wissahickon aquifer occasionally pumping into the northern area. The Newark Water Treatment Plant has been drawing water from the White Clay Creek since 1992. The White Clay Creek is also the source of the water we use to fill the new reservoir. The White Clay and Red Clay Creeks are the sources for the water purchased from United Water.

PROTECTING THE WATERSHED

Newark is actively involved in the White Clay Creek Wild and Scenic watershed management plan. The plan delineates a cooperative approach to resource management and watershed protection. The White Clay Creek is now designated a Wild and Scenic River. Newark participates in the watershed-based Christina Basin Water Quality Management Strategy which is designed to protect and improve the quality of the streams including the White Clay Creek.

PROTECTING THE GROUND WATER

Preventing pollution is the top priority in protecting our groundwater supply. In 1991, Newark developed and implemented Water Resource Protection Regulations. The regulations protect our drinking water supply from pollution that may be associated with inappropriate land uses.

Information for this section was gathered from publications developed by the White Clay Creek Wild & Scenic River Program.

Additional information can be found at the following web sites:

White Clay Wild and Scenic River Program
www.whiteclay.org
White Clay Watershed Association
http://mercury.ccil.org/~wcwa/
City of Newark
http://www.cityofnewarkde.us/

SOURCE WATER ASSESSMENT

In 1996, Congress amended the Safe Drinking Water Act creating a new program titled Source Water Assessment and Protection Program. Each state is required to identify and evaluate all sources of water that are used as drinking water sources within the state. The goal of the program is to assess the susceptibility of public water sources to contamination and to promote and facilitate the protection of these water sources. Customers should contact the City of Newark Water Department at 302-366-7055 about how to obtain a copy of our surface and ground water assessments. You may also view our surface and ground water assessments at the website: http://www.wr.udel.edu/swaphome/index.html

SYSTEM UPDATE

Well 14 will be re drilled on the South Well Field treatment plant property. The old location sits on the shoulder of Route 72 where access and lack of work space complicated the re drilling of the well prompting the search for a new site.

Work continues on the design for the replacement of the Northwest Booster Station and we have begun work to design and locate a pressure sustaining pump to serve the upper reaches of Laurel Avenue. In the coming years we will be renovating existing pressure sustaining pump systems throughout our system. We have also begun the design effort to develop a SCADA (Supervisory Control And Data Acquisition) system that will allow us to more efficiently and effectively operate and maintain our water system.

Water Meters, Leaks and High Water Usage.

The City continues to receive inquiries regarding excessive water use and the factors that might be causing the consumption. Frequently the questions concern the accuracy of the water meter and the possibility that the meter is reading too high. The water meters that we use are positive displacement and measure the water as it flows through and rotates a metering chamber. By design, it is extremely rare that a meter will over read. To do so the measuring chamber would need to rotate more than once for every volume of water that flows through. Furthermore, it is the force of the water that causes the chamber to rotate and the chamber is not able to rotate if the water is not flowing.

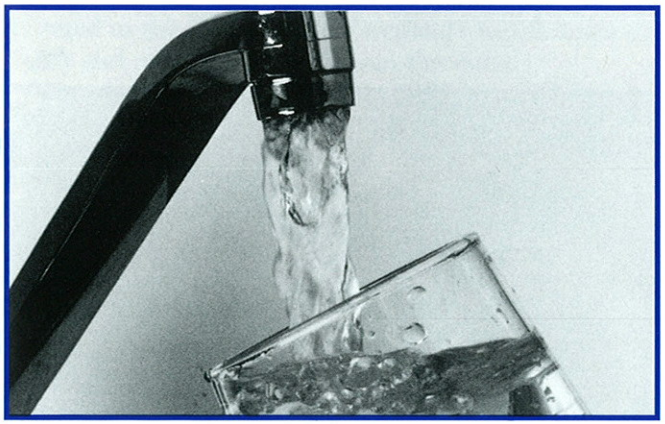
What we find when we test an old meter is that they register less water than they should. This occurs for several reasons. First the chamber must be able to spin with very little friction necessitating that there are wear surfaces with very close tolerances. These surfaces wear and in some cases accumulate deposits allowing water to bypass the chamber or the chamber may bind and only move when large volumes of water are being used. Low flows on the other hand can often move through the chamber without making the chamber rotate at all.

The more likely cause of high water consumption is a water leak or unintended water usage. One should start looking for leaks by finding the water meter and observing the "tattle-tale" (a small triangle or snow flake shaped device that registers very small movements of the water meter mechanism) for movement during a time when no one is using water in the house. If water is moving through the meter the tattle tale will be rotating ever so slowly.

Easy places to look for leaks are dripping faucets, leaking toilets, and outdoor hoses that have been left on. Faucets and hoses are easy to see if they are leaking. Toilets are often silent leakers of water and difficult to identify. If you are uncertain what might be wrong or don't know where to start, please call us and we will assist you. Additional water saving tips are located on our web page and associated web links.

NEWARK'S HIGH-QUALITY WATER

The City of Newark Water Department has been committed to providing you with safe, high-quality water since 1888. We regularly test our water to ensure safe drinking water. We are proud to report that the Newark water supplies meet or exceed the water quality standards of the Delaware Division of Public Health Office of Drinking Water and the Environmental Protection Agency. The table on the other side of this report lists those substances found in our finished water during the calendar year 2009.



INFORMATION FOR YOU

The sources of drinking water (both tap water and bottled water) include streams, ponds, reservoirs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and in some cases radioactive material and may pick up substances resulting from the presence of animals or human activity.

Substances that may be present in source water include:

Microbial substances include viruses and bacteria, which may be naturally occurring or from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic substances include salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, or farming.

Pesticides and herbicides may come from a variety of sources such as agriculture, urban stormwater runoff, and septic systems.

Organic chemical substances include synthetic and volatile organics, which are by-products of industrial processes and can also come from gasoline stations, urban stormwater runoff, and septic systems.

Radioactive substances which can be naturally occurring or the result of oil and gas production and mining activities.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some substances. The presence of these substances does not necessarily indicate that water poses a health risk. More information about substances and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800) 426-4791.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

IMPORTANT HEALTH NOTES

Cryptosporidium and Giardia You may have seen reports about Cryptosporidium and Giardia, microscopic organisms which can enter surface waters from runoff containing animal wastes. If ingested, Cryptosporidium and Giardia can cause diarrhea, fever and other gastro-intestinal symptoms. Crypto and Giardia were not found in Newark's finished water sample. The organisms are eliminated in our treatment process through filtration, clarification and disinfection.

Radon Radon gas is found in soil. The gas moves through the ground into the air and may enter homes through foundations. Drinking water from ground water may add radon to the home air. The EPA indicates the risk is small compared to the radon entering through soil. Standards for monitoring radon in drinking water have not been set by EPA and the Delaware Office of Drinking Water.

Special Populations Some people may be more vulnerable to substances in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infections by cryptosporidium and other microbial substances are available from the EPA Safe Drinking Water Hotline at (800) 426-4791.

Water Quality Report

Regulated Substances

	Unit of Measure	Highest Level Allowed MCL	Ideal Goal MCLG	Highest Level Detected	Annual Range	Date	Violation	Major Sources
Barium	mg/l	2	0	0.298	0.0-0.298	2009	N	Discharge of drilling wastes, metal refineries, erosion of natural deposits
Chromium	ug/l	100	0	4	0.0-4	2009	N	Discharge from steel and pulp mills, erosion of natural deposits
Chlorine (free)	mg/l	4	1.0	2.05	0.55-2.50	2009	N	Disinfection chemical added to water - chlorination
Fluoride	mg/l	1.8	0.8	1.43	0.40-1.43	2009	N	Water additive which promotes healthy teeth
Haloacetic Acids, Total (HAA's)	ppb	60*	0	9.0**	1.0-48.9***	2009	N	By-product of drinking water chlorination
Nickel	ug/l	100	0	1.9	0.0-1.9	2009	N	Discharge from mining and plating operations, erosion of natural deposits
Nitrate	mg/l	10	0	6.3	0.40-6.3	2009	N	Leaching from septic tanks; runoff from fertilizer use
Pentachlorophenal	ppb	1	0	0.11	0.0-0.11	2009	N	Discharge from wood preserving factories
Total Oragnic Carbon	mg/l	TT	See Special Education Statement	2.3	1.3-2.3	2009	N	Naturally present in the environment
Tetrachloroethylene	ug/l	5	0	0.841	0.667-0.841	2008	N	Discharge from factories and dry cleaners
Total Trihalomethanes (TTHM's)	ppb	80*	0	12.1**	1.1-66.4***	2009	N	By-product of drinking water chlorination
Turbidity	ntu	0.5	0	0.36	0.02-0.36	2009	N	Particulate matter from soil erosion and biological cycles

** This MCL is based on a 4 quarterly average* *** Annual Average (4 quarters) of all samples taken by the City of Newark* **** Range of individual samples*

Microbiological Substances (40 samples per month)

Total Coliform	each	We collect >40 bacterial samples per month, no more than 5% of the samples can be positive	0	1	1 in 485 samples was positive	2009	N	Naturally present in the environment

Radiological

Gross Alpha	pCi/l	15	0	.59	0.12-0.59	2009	N	Erosion of natural deposits
Gross Beta	pCi/l	50*	0	4.0	4.0	2009	N	Decay of natural and synthetic deposits
Radium 228	pCi/l	5	0	1	0.26-0.61	2009	N	Decay of natural and synthetic deposits

** EPA considers 50 pCi/L to be the level of concern for beta particles.*

Lead and Copper (30 samples)

90th Percentile Lead	ug/l	15	0	5	2-5	2008	N	A total of 30 samples were collected none exceeded 15 ug/l } reduced
90th Percentile Copper	mg/l	1.3	0	1	0.1-1	2008	N	A total of 30 samples were collected none exceeded 1.3 mg/l } monitoring

Unregulated Substances and Secondary Standards

Alkalinity	mg/l	nr		64	26-64	2009
Chloride	mg/l	250	<250	77	33-77	2009
Hardness (Total)	mg/l	nr		120	50-120	2009
Iron	mg/l	0.3	<0.3	0.05	0.02-0.05	2009
Manganese	mg/l	0.05	0	0.012	0.0009-0.012	2009
pH	0-14	6.5-8.5	7.2	7.8	6.2-8.5	2009
Sodium	mg/l	nr	<50	31	13-31	2009
Sulfate	mg/l	250		45	20-45	2009
Total Dissolved Solids	mg/l	nr	<500	214	178-214	2009

Definition of Terms

Action Level	that concentration of a contaminant which when exceeded requires the water supplier to remediate.
Highest Level Detected (HLD)	the highest level detected in a group of samples.
Maximun Contaminant Level (MCL)	the highest level of a contaminant that that is allowed in drinking water.
Maximun Contaminant Level Goal (MCLG)	the level of a contaminant in drinking water below which there is no known risk to health.
Microgram per Liter (ug/l)	(ppb) parts per billion - the unit of measure using micrograms in one liter of water. This corresponds to one cent in $10,000,000.
Milligram per Liter (mg/l)	the unit of measure using milligrams in one liter of water. This corresponds to one cent in $10,000.
mrems/yr	millirems per year his is a measure of radiation absorbed by the body
Non detects (nd)	laboratory analysis indicates that the contaminant is below the detection limit.
Not Regulated (n/r)	no MCL established for this contaminant.
Picocuries Per Liter (pCi/l)	the unit of measure using picocuries in one liter. The measure of the radioactivity in water.
Trihalomethanes and Haloacetic Acids	compunds that maybe formed when organic material in the source water reacts with chlorine.
Treatment Technique (T.T.)	a required treatment process intended to reduce the level of a contaminant in drinking water. coagulation, filtration, and disinfection of the raw water prior to public distribution.
Turbidity	the measure of the clarity of water in nephelometric turbidity units (NTU).

Special Educational Statement

Lead: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homesin the community as a result of materials used in your homes plumbing. If you are concerned about elevated lead levels in your home's water you may want to have your water tested.If the results show some lead or copper in your water sample it most likely comes from the plumbing in your home. Running the cold water tap for 2 - 3 minutes before use is a simple way of eliminating any lead or copper that may be in your tap water. Additional information is available from EPA's Safe Drinking Water Hotline (800-426-4791).

Nitrate: Drinking water nitrate levels above 10 mg/l are a health risk for infants of less than 6 months in age. High nitrate levels in drinking water can cause blue baby syndrome in infants consuming this water. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should seek advice from your health care provider.

Total Organic Carbon: (TOC) has no health effects. TOC is an indicator for the formation potential of disinfection byproducts - trihalomethanes (TTHM's) and haloacetic acids(HAA's). Drinking water containing these disinfection byproducts in excess of their respective MCL's may lead to adverse health effects. Our water is well below the MCL's for these disinfection byproducts.